JOURNAL
OF AMERICAN INSURANCE

SEPTEMBER, 1961 Vol. 37, No. 9

School Days or Peril Days?

Americans on the Move

A Peerless Span for a Noble Bay

Trading Posts for New Frontiers

How to Move a Mountain

Treasure House of Wayside Fame

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SEPTEMBER, 1961 Vol. 37, No. 9

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Exempt Village School District, Latonia, Ohio

OUR COVERS

THERE MAY STILL be nearly 10,000 one-room schools whose doors will open again when the nation's 25 million children return to the elementary public schools this September. But none of them is ever likely to become as enshrined in the hearts of pupils and parents alike as the school on our front cover.

That building as it stands today on the grounds of the Wayside Inn near Boston incorporates the original "Redstone" school moved from its site in Sterling, Massachusetts, where it figured so famously in the children's classic, *Mary's Lamb*. More of the details are given in *Longfellow's Inn Revisited* (page 27) and in *Annals* (page 11).

Typifying the transformation in school facilities in the 150 years since the lamb's Mary Elizabeth Sawyer trudged off to school is the Orchard Hill High School of Latonia, Ohio, as pictured on the back cover. Valued at $1,630,000, it is insured in the amount of $1,467,270 by the Celina Mutual Insurance Company under one of the new public and institutional property policies. Nationwide, contracts for new educational buildings were at a record high of more than $3 billion in 1961. ⊙

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NEWELL R. JOHNSON, *General Manager*
FREDERICK J. KEILHOLZ, *Editor*
L. A. FITZGERALD, *Assistant Editor*
DONALD W. SEGRAVES
RICHARD C. BJORKLUND
WILLIAM M. SCHIBUR

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CULPRIT OF THE CLASSROOM

Fire will haunt too many reopened schools even though protective measures are spreading.

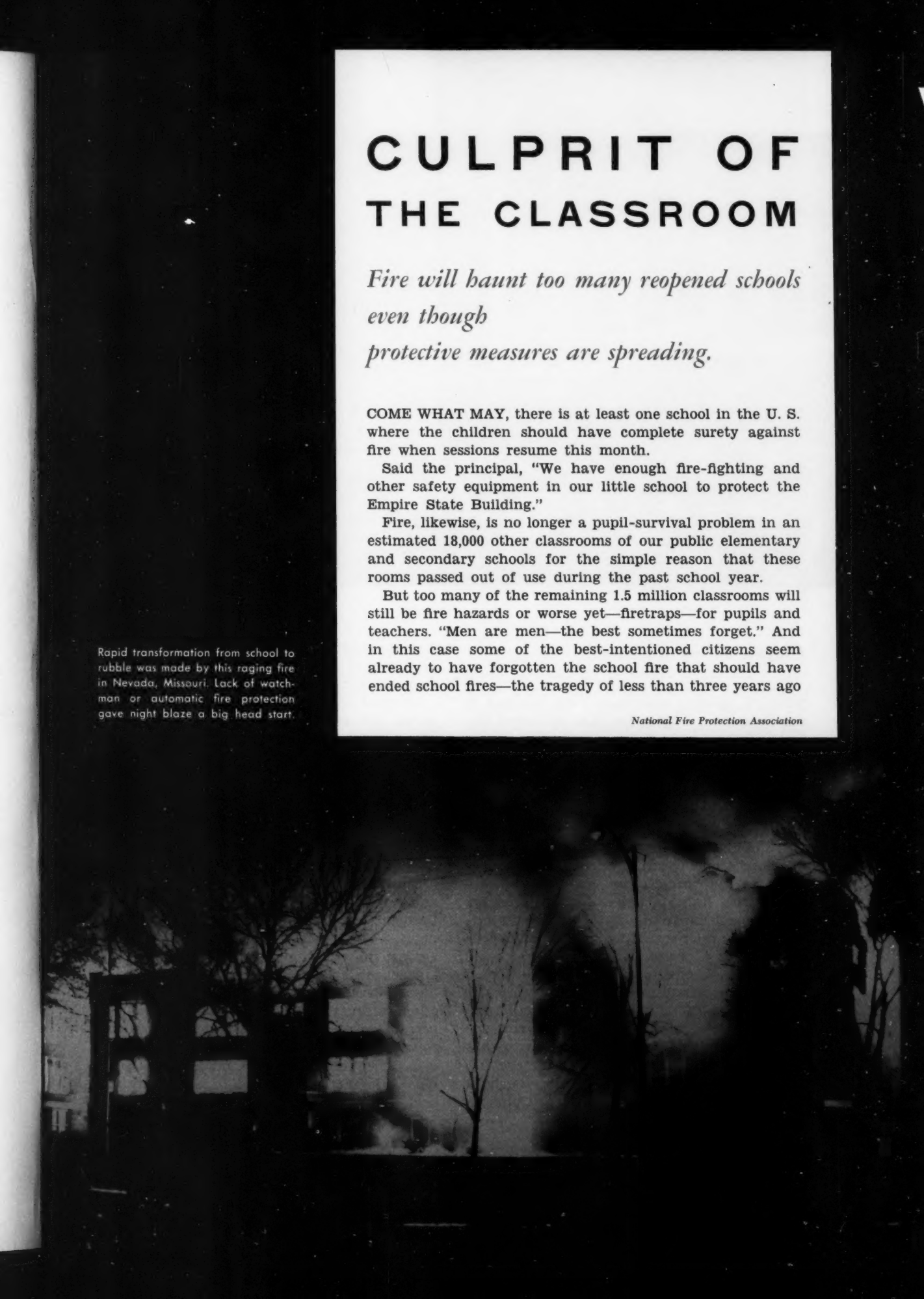
COME WHAT MAY, there is at least one school in the U. S. where the children should have complete surety against fire when sessions resume this month.

Said the principal, "We have enough fire-fighting and other safety equipment in our little school to protect the Empire State Building."

Fire, likewise, is no longer a pupil-survival problem in an estimated 18,000 other classrooms of our public elementary and secondary schools for the simple reason that these rooms passed out of use during the past school year.

But too many of the remaining 1.5 million classrooms will still be fire hazards or worse yet—firetraps—for pupils and teachers. "Men are men—the best sometimes forget." And in this case some of the best-intentioned citizens seem already to have forgotten the school fire that should have ended school fires—the tragedy of less than three years ago

National Fire Protection Association



Rapid transformation from school to rubble was made by this raging fire in Nevada, Missouri. Lack of watchman or automatic fire protection gave night blaze a big head start.

Handsome and fire-safe is the new Our Lady of the Angels School. Designed by architects Barry & Kay of Chicago, it provides pattern for others to follow.

Culprit of the Classroom

when 92 children and three nuns perished in the December 1, 1958, fire that destroyed Our Lady of the Angels School in Chicago.

A spokesman for the National Fire Protection Association said there is no question that public apathy toward school fire prevention has again set in. He admits that a substantial number of physical changes have been made during the past three years, but the rate of improvements has been dropping steadily to where it is once again at the "pre-Chicago school fire level." Large cities, he adds, are still carrying on fire improvement programs, but this follows primarily from their spreading large initial expenditures over a period of years.

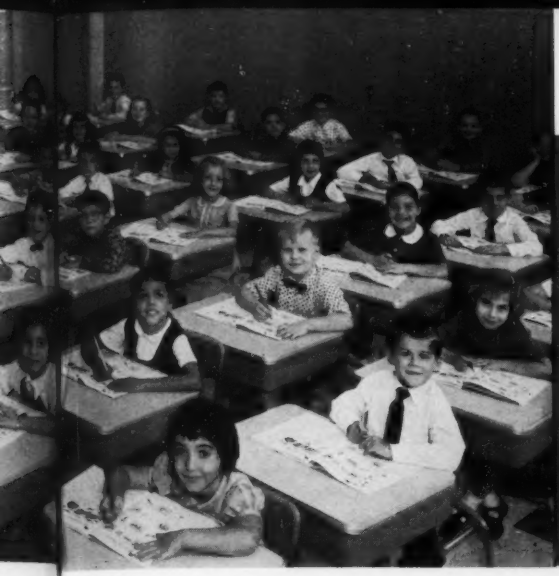
To Chicago's credit, about 150 of its Roman Catholic schools will be equipped with sprinkler systems when fall classes resume, according to Monsignor William E. McManus, superintendent. Action rather than the onset of apathy has marked the Chicago scene ever since the December fire. Immediately afterward, the local archdiocese retained a reputable fire prevention engineering firm to inspect all of its schools and prepare a written report on each, detailing improvements that should be made.

In effect now is a requirement that principals of all the city's Roman Catholic schools, in person or through a responsible delegate, inspect their schools three times a day—before, during and after classes. During these inspections all safety equipment is checked for efficiency, and potential fire hazards are removed. Written daily records must be kept of the inspections and also of fire drills conducted at least once a month.

Through a combination of efficient equipment and constant vigilance, officials of Chicago's Catholic schools believe they are now giving pupils and teachers maximum protection against the ever-present danger of fire.

Chicago's public schools open this fall at the highest level of safety in their history. Among other safeguards, 303 of the buildings—a high percentage of all those in the system—will be sprinkler-equipped on opening day.

In New York City a $5 million emergency repair program is under way to remove fire and health violations in more than half of the city's



Automatic sprinklers and fire-resistant building materials are classroom guards for many of the nation's youngsters who this month will start the new fall term.

School storage areas have always been a favorite haunt for fires. Room here has automatic sprinklers and overhead fire door to alleviate ever-present danger.

public schools. A spokesman for the program in that city's schools said the objective is to correct all serious conditions in time for opening day.

Thirty-four of the schools, built between 1885 and 1915, will this year have added exits, sprinkler facilities, fire-resistant glass and other safeguards. In addition, the New York City Fire Department has started a program whereby both public and private schools will be inspected every three months.

Smaller towns have set some good examples, too. Fire Marshal Rod Porter of Winnetka, Illinois, for one, said his community has been making steady progress in its school fire safety program. "We've always had intensive school inspections, but the Our Lady of the Angels fire brought many new hazards to our attention. A good start has been made toward correcting them, but we still have a long way to go."

To ensure that Winnetka and neighboring communities do not become apathetic about school fire hazards, they should remember a close call just two weeks after the Chicago school fire. A Kenilworth school, which is within Fire Marshal Porter's jurisdiction, caught fire. An automatic sprinkler system, installed 30 years ago and never before used, doused the blaze before the Winnetka Fire Department arrived. Porter said: "If it hadn't been for the sprinklers, I'm convinced we would have had another disaster like Chicago's on our hands."

Elsewhere, even with the regrettable current apathy reported by the NFPA, the nation's schools are better fortified than they were at the time of the Chicago school fire. On the first anniversary of that calamity the NFPA released the results of a survey showing that some 53,000 public schools had made significant improvements toward fire safety. This upgrading alone, the NFPA said, gave a fire-safe environment to 4.5 million students.

Since then, though, there have been new tragedies to signalize the public apathy. Last year alone 14 U. S. schools were listed in the NFPA's large loss fire report which includes only fires causing more than $250,000 in property losses. At the Eddystone, Pennsylvania, Grade and High School, 17 students were injured in a $650,000 blaze that started shortly before the school was to be closed for last year's Christmas holiday. Six pupils were injured when

Encyclopaedia Britannica Films, Inc.

Fire protection equipment is just part of a school safety program. Students and teachers must also be well versed in precautionary measures such as fire drills. Lack of a pre-planned evacuation route has doomed many lives to fire.

Culprit of the Classroom

a $700,000 fire destroyed the Clinton Street School in Wauseon, Ohio. These are just two of the several thousand school fires which last year claimed nearly $80 million in damages.

Without minimizing the consequences of public apathy, one fire expert contends that too much school construction money is being diverted to frills for the so-called "modern look" that has little or nothing to do with fire safety. Some school architects still feel fire preventive construction often conflicts with their own ideas of good design. In such instances, appearance takes precedence over the safe and practical.

But Chester I. Babcock, manager of the National Fire Prevention Association's Fire Record Department, affirms that only when safety receives as much attention as pastel colors, oversized gymnasiums and other unnecessary extras can we expect to escape future tragedies. Our schools must accede to the principle that installed interior fire protection equipment is as necessary a functional part of a building as heating, lighting, toilets and stairways.

Babcock explained that we have known for years how to design and protect a school so that the lives of pupils and teachers will be safe from fire. Practical methods of assuring life safety in the event of fire, based on sound fire engineering principles, have been known for decades, Babcock added.

Growing apathy on the school fire problem has an evil antipode, too. A prominent school administrator said that because of the sudden overwhelming awareness of school fire hazards, decisions were made hastily and haphazardly. Later, when these were proved ill-advised or faulty, no one would step forward to take the responsibility of reconsideration.

A case in point is the school described earlier by its principal as having enough equipment to protect the Empire State Building.

Quite often, said a recently retired fire chief, fire prevention legislation which is enacted following a major tragedy is more harmful than the fire that prompted it.

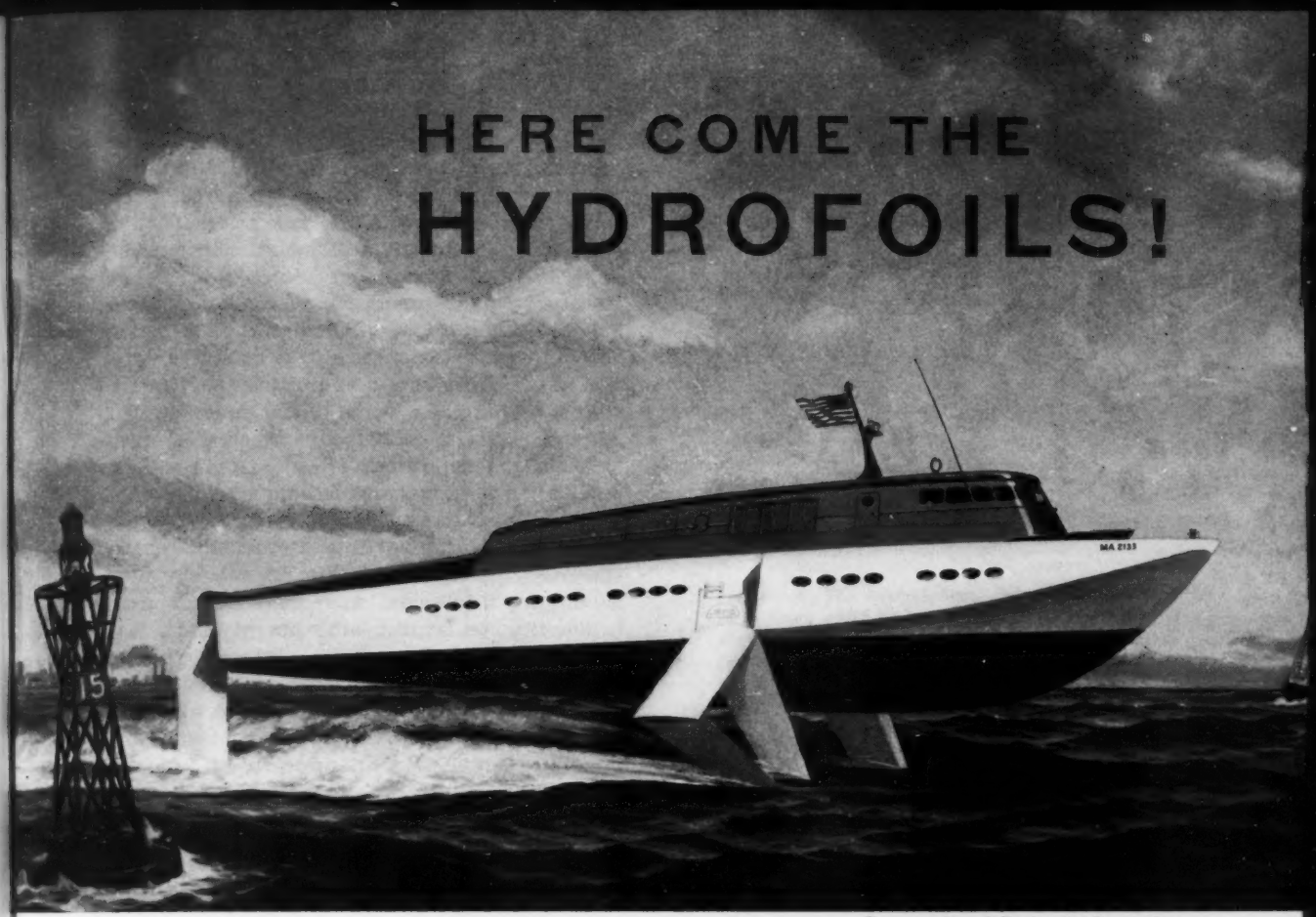
Of the many basic improvements which have been recommended for schools, sprinkler systems are perhaps the most controversial. Most insurance fire engineers and safety men wholeheartedly endorse automatic sprinkler and fire detection systems. But there is no agreement as to how widely these systems should be installed. A safety engineer for an insurance association recommends that only older combustible buildings should have total sprinkler protection. Still others would like to see laws requiring that all schools be outfitted with sprinklers.

On the other side of the disagreement are many school leaders and educators. This group believes that sprinklers are needed in hazardous sections of school buildings but that their protection throughout buildings is unwarranted and wasteful.

An official of the New York State Education Department stated that most school fires are the result of either poor housekeeping, poor administrative practices or are set by vandals after school hours. National fire statistics show electrical faults and heating defects as the two greatest causes of school fires.

School officials who have been through fires have a final word of caution against a sense of false security. As one of them said, "Even though our schools are now well equipped with safety devices, we must not rely entirely on this equipment. Like any machinery, it can fail in emergencies. Our big responsibility is to guard against human failure." ⊙

HERE COME THE HYDROFOILS!



Grumman Aircraft Engineering Corporation

Hydrofoil liner *HS Denison*, scheduled for launching in October at Bethpage, Long Island, will ride five feet out of the water at speeds of 60 knots. Ship will test practicality of hydrofoils for commercial use.

Ships riding on stilts will soon skim the waves at 115 mph.

SHIPS THAT "FLY" on hydrofoil wings will soon be transporting passengers and cargo at speeds three times as fast as the swiftest ocean liner. Their prototypes already are in the water or under construction.

At Bethpage, Long Island, sea trials begin next month for the *HS Denison*, an 80-ton hydrofoil vessel hailed as "the most significant advance in marine transportation in five decades." Designed to test the ocean-going capabilities of such craft, this 104-foot vessel is expected to make the New York-to-Bermuda run in less than eight hours with a potential passenger list of 70 to 80 persons. It is the forerunner of ships expected to reach speeds of 100 knots (about 115 mph) within two years.

In a separate development, Boeing Airplane Company laid the keel last February for a 110-ton hydrofoil subchaser for the U. S. Navy, scheduled for launching sometime next year at Martinac shipyard in Tacoma, Washington. Top speed will be about 50 knots, making this the first surface craft fast enough to track down and kill nuclear-powered submarines of the Albacore class.

Several hundred smaller craft already are in use by boating enthusiasts and excursion line operators in this country and abroad. At Cali-

Wide World

Italian-built hydrofoil craft carries 60 passengers at speeds up to 40 miles an hour. These boats serve as ferries in Washington State, between Puerto Rico and the Virgin Islands and between Italy and Sicily.

Here Come the Hydrofoils!

fornia's Lake Tahoe, one businessman put foils on his speedboat and now commutes 30 miles daily across the lake. Other boaters generally find the water too rough for conventional craft in the afternoons. Hydrofoil ferrys now operate between Puerto Rico and the Virgin Islands and between Washington State and British Columbia.

Abroad, West German police race up and down the Rhine in hydrofoil speedboats, and Russia is reported building nearly 300 hydrofoils for passenger operations on her many rivers, lakes and canals. One Soviet model is a 24-ton, 40 mph vessel called the *Raketa,* with a seating capacity of 66 persons. A larger craft called the *Meteor* is said to carry 150 passengers at 45 mph.

All of these vessels skim over the waves on wing-like structures that lift the entire hull out of the water and keep it there. To the observer, the appearance is that of a ship riding on stilts, since the foils that do the work remain largely out of sight in the water.

Basically, a hydrofoil works on the same principle as an airplane wing. Water flowing over its surface creates more pressure on the bottom side than on the top, producing lift. The faster the ship goes, the more lift is produced—enabling a hydrofoil craft to go 50 per cent faster than a conventional vessel on the same amount of power. It also makes power increases practical for the first time.

With conventional ocean liners, a phenomenon known as "wave-making resistance" limits top speed to about 36 knots. Beyond that speed the vessel finds itself bucking a wall of water which the ship's own movement has created, burning up enormous amounts of additional power to achieve even slight increases in speed.

"It's taken 40 years to increase the speed of ships by 10 knots, and now almost overnight we can triple their speed. That's pretty revolutionary," says William P. Carl, president of Dynamic Developments, Inc., a Grumman Aircraft Engineering Corporation affiliate which built the *HS Denison* for the U. S. Maritime Administration.

Actually, there is nothing new about the idea of using hydrofoils. An Italian named Enrico Forlanini developed the concept in 1898, and Wilbur and Orville Wright built and operated a hydrofoil boat at Dayton, Ohio, in 1907. Another famous inventor, Alexander Graham Bell, collaborated with K. C. Baldwin on an experimental craft that attained speeds of 60 miles an hour off Nova Scotia in 1918. Yet only in the past six or seven years has there been widespread interest in the hydrofoil's commercial and military applications.

Marine engineers credit the breakthrough mainly to the aircraft industry, which developed the lightweight hulls and power plants necessary to make hydrofoil ships feasible. The U. S.

Wide World

Navy's Office of Naval Research also has sunk several million dollars into hydrofoil research since 1947, culminating in the subchaser now under construction in Tacoma.

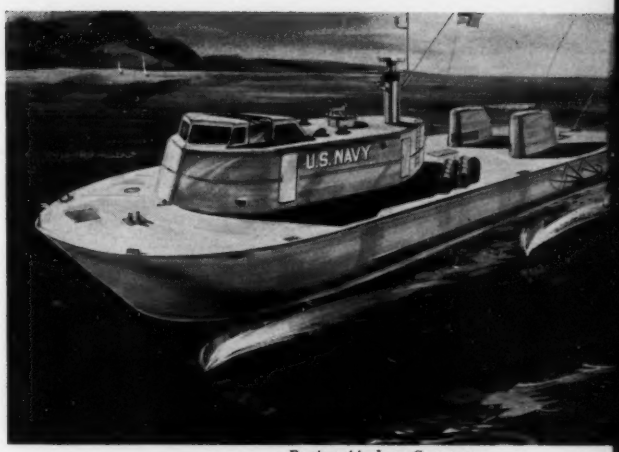
What role hydrofoil craft will play in commercial shipping and passenger service is not yet clear. The Maritime Administration contracted with Stanford Research Institute earlier this year for a review of the economic advantages and an evaluation of possible trade routes. The report is scheduled to be completed late this summer, and the sea trials scheduled for the *HS Denison* also will shed additional light on the ship's possibilities.

For the foreseeable future, hydrofoil craft are expected to be at their best over relatively short distances, 50 to 100 miles, in competition with slower conventional vessels or roundabout land transport facilities. Shipping authorities cite such possibilities as the Great Lakes, Chesapeake Bay, the Hawaiian Islands and intercoastal waters generally.

Some enthusiasts, however, visualize the day when full-size ocean liners equipped with foils might carry passengers and express freight across the Atlantic in 36 hours or less. This possibility would appear to be at least 10 to 15 years away, largely because of several unsolved problems, both technical and economic.

One major drawback is that a vessel capable of staying above the highest waves in rough weather would have to ride some 40 feet out of the water—a height now considered impractical. The *HS Denison* will rise about five feet out of the water and is expected to weather five-to-seven-foot waves without undue slamming. When it encounters waves higher than that, the ship will slow down and settle back into the water like a conventional vessel.

Marine insurers are awaiting the results of the *HS Denison's* trials with keen interest, since the advent of commercial fleets equipped with hydrofoils would pose a question as to the risks involved for cargo, passengers and the vessel itself. While no hard conclusions can be drawn yet, it would appear that hydrofoil craft will have some advantages over conventional vessels of the same size. Their higher speed enables them to skirt around storms or to run for shore to avoid sudden squalls and fog, and their smoothness in rough water could be expected to reduce cargo damage.



Boeing Airplane Company

U.S. Navy patrol craft will be world's largest hydrofoil ship, a 110-ton, 115-foot craft for guarding the nation's coastlines against nuclear submarines. Ship will be launched by late 1962 in Tacoma, Washington.

Several mutual insurers already have taken the plunge by writing coverages on Boeing, Stanford Research Institute, General Electric and other firms directly or indirectly involved in hydrofoil research and construction. Mutual companies also insure a number of small-boat manufacturers who are eyeing the growing hydrofoil market.

Without the protective services that insurance provides, neither the hydrofoil nor any other major innovation in the transportation world could be launched on a commercial basis. ⊙

←
Russian hydrofoil, the Meteor, is one of two experimental designs now in use on Soviet waterways. This one carried 150 passengers from Moscow to Gorki in 12 hours. Russia's Ministry for the River Fleet has announced plans to build 285 hydrofoils for passenger service.

Up-Right Hydrofoils

→
Do-it-yourself hydrofoils are now being sold by two firms, Up-Right Hydrofoils of Berkeley, California, and Grumman Aircraft of Bethpage, Long Island. Kits cost less than $400, can be installed on most outboards. Up-Right reports, "We understand from owners that they have had no difficulty obtaining insurance."

NOW AMERICA'S MOVING

This is the seasonal crest of the annual relocation of 36 million people.

Packing specialists relieve householders of the work and worry of stowing fragile items for moving. Moving companies complain that claims for damage persist, in spite of improved equipment, better packing methods.

Automation has made moving and storage safer, faster, but strong men still do most of the work. Mutual insurance companies underwrite workmen's compensation coverages for scores of carriers of household goods.

Two photos Bekins Van & Storage Co.

AFTER LIVING 14 YEARS in Washington, D. C., former Vice President Richard Nixon and his family packed up this year and returned to California. The four Nixons, perhaps the most prominent American family to relocate this year, moved into a home rented from film director Walter Lang. They will move again this fall when their own home is built.

Moving the Nixons, a job done by Bekins Van & Storage Co., was, of course, more complicated than relocating an ordinary household. Dick Nixon's personal papers and office equipment totaling 14,040 pounds were hauled cross-country by two large moving vans in February. Then, in June, some 20,000 pounds of household goods made the 3,000-mile journey in two big Bekins vans.

Thus the Nixons joined a legion of movers that each year numbers about 36 million people, roughly the same number who voted last year to keep Mr. Nixon in Washington. In moving from Washington to California, the Nixons were counted among 6 million people who will move from one state to another this year. And when they move to their own home, they will be counted among 24 million Americans who will move within the same county.

Though September is the peak of the nation's moving season, movers of household goods have already dubbed 1961 "the biggest moving year in history." Most attribute the family relocation

Atlas Van-Lines Inc.

Bidding farewell to friends makes moving distasteful to children. Psychologists urge that children participate in preparations, keep address lists of old pals. Van shown above was produced by firm protected by services of mutual insurance.

boom to our "corporate culture" that imposes frequent transfers on employees of large organizations, including the Army and Navy. Some 63 per cent of city-to-city moves are made by business executives and professional personnel promoted or transferred. Such moves, which account for a major part of the nation's $1.3 billion long-distance moving bill, are up 8 per cent this year. Corporations, however, foot more than half of the household relocation expenses of transferred employees.

Insurance is an important part of moving from the time big tractors and trailers are produced at such plants as International Harvester and Fruehauf, both of which are protected against workmen's compensation claims by mutual insurance companies. Today's diesel tractor and van combinations, equipped with such refinements as air suspension, cost upward of $20,000. By contrast, several hundred dollars for a horse and wagon formerly put one in the moving business.

Once a tractor and van is in operation, the operator must protect the value of the equipment with comprehensive fire and theft insurance. Coverages must be taken out against bodily injury and property damage liability, usually in amounts of $100,000/$300,000 per unit. And most large moving companies top this protection with catastrophe coverage against a variety of perils.

Most families, and even some movers' representatives, confuse the legal liability of household goods carriers with "insurance." The confusion is understandable, but it frequently leads to bitter misunderstandings between shippers and carriers if household goods are damaged in transit.

Interstate movers of household goods operate under provisions of the Motor Carrier Act of 1935 and under strict supervision of the Interstate Commerce Commission. Those operating in a single state are governed by local bodies. ICC released rate orders to household goods movers limit carriers' legal liability to 30 cents per pound per article. To illustrate the operation of this regulation, F. L. Wyche, executive secretary of the 1,800-member Household Goods Carriers' Bureau, points out that if a 10-pound lamp worth $100 were destroyed in transit, the carrier's maximum liability would be only $3.

Another released rate order provides that shippers may also declare a value in a lump sum and pay 50 cents for each $100 declared. Under this option if the lamp were destroyed, the shipper could recover its full value, provided that the declared value was equal to the full value of the shipment. Otherwise, coinsurance would apply and the shipper would recover only a proportionate share of the loss.

A third option open to shippers, one not frequently exercised, is to revert to common law

liability of the carrier and pay approximately double the ordinary weight and mileage rate.

Fullest protection for the shipper, however, is provided by a cargo or transit insurance policy, which protects goods in transit regardless of the legal liability of the carrier. These inland marine policies are underwritten by mutual insurance companies for a growing number of moving families. Rates for such transit policies are based on mileage and are determined for mutual companies by the Transportation Insurance Rating Bureau. Transit policies provide "all risks" coverage, but usually exclude fragile goods, especially if the shipper packs them.

Carriers, for their part, usually protect themselves against excessive liability for damaged shipments by taking out cargo insurance with a high deductible clause. One major company is a self-insurer for damages as high as $2,500, but claims above that amount are extremely rare. ICC regulations require household goods carriers to provide insurance of $1,000 for loss or damage to the contents of one vehicle and $2,000 for aggregate losses or damages at any one time and place.

Though insurance looms large to transporters of household goods, losses have been minimized by improved handling methods and better moving equipment. Containerization ("Pillboxes for Freight Handling," March, 1961, JOURNAL OF AMERICAN INSURANCE) has reduced both pilferage and cargo damage. Palletization and use of forklift trucks in storage and warehouse facilities have also protected goods. And so have operations of the ICC, which limits moving van drivers to 60 hours a week, 10 hours a day, and spot checks the condition of tractors and trailers on the highway. Damage claims, however, have not been reduced, even by such devices as trailer air suspension and the use of as many as 100 padded blankets to pack a single van. One operations manager blames this on claims consciousness. "The public," he complains, "seems to feel that when one pays a big moving bill, he deserves some kind of rebate."

Mutual insurance companies underwriting workmen's compensation for dozens of major moving companies can attest that one result of improved handling of household goods has been a reduction in worker injuries. New slings, skids, dollies and lifting devices have helped. "However," says one authority, "it still takes two fellows with strong arms to get a sofa down the stairs."

Moving companies, though they still gain the largest share of their revenues from household moves, have recently become increasingly interested in moving business offices and whole industries. A 240-van caravan moved a Fort Wayne, Indiana, department store in only 73 hours. But it took four months to plan the move. Another mover hauled the baseball gear and records of the Los Angeles Dodgers and San Francisco Giants, and gained a replica of the Giants' home plate as a memento. And all of these business moves require special forethought involving drawing boards, coded tickets and other devices that permit moves with a minimum of lost work time.

To meet challenges of modern moving, several companies maintain research departments to study new methods and special relocation problems. But a problem even careful research cannot solve is the psychological effect of pulling up stakes, especially among the estimated 12 million children aged 1 to 17 who move each year. A study by the Association for Family Living concluded, "The most important step toward solving the problems of moving with young children is to recognize that everybody, young and old, resists change and will have many mixed feelings about a new environment."

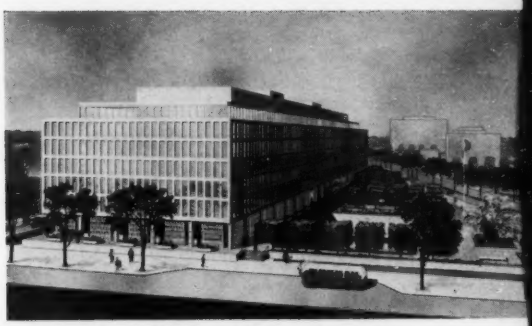
How deeply children feel about moving is illustrated by this possibly apocryphal story concerning the prayer made by a young Iowa girl on the eve of a move to another city: "God bless mommy and daddy, and my little brother Tommy, and this is good-by, God—we're moving away." ⊙

Materials lift is used to accomplish this complex move of a business firm. Months of planning minimize work time lost by moving. Transit insurance protects value of machinery, office equipment, inventory during move.

FROM OUR ANNALS

SCHOOL DAYS—

Past and Present



Now under construction, this is education's probable new national center, intended as the headquarters for Commissioner S. M. McMurrin.

LIKE MARY ELIZABETH SAWYER of *Mary's Lamb* fame, an estimated half million children will trip off for the first time to elementary public schools this September. It is most unlikely there will be a single lamb in the whole procession. But on the school sites across the nation there will be about 70,000 brand new classrooms completed during the past school year. For these classrooms and other items of public school education Americans are now expending about $16.5 billion a year, three times more on public elementary and secondary schools than 10 years ago and eight times more than 30 years ago.

No matter what is charged up against the lamb, Mary went to school for a mere fraction of the estimated $390 that is now being spent annually per pupil in average daily attendance. But just as was true in Mary's day, the local community remains the main source of school support. Fifty-six per cent of our school revenues come from community level taxes on the property of homeowners, farmers, businesses and others; sales, income and excise taxes of the states provide 38 per cent. The remainder comes from other sources, with only a modicum from the federal government.

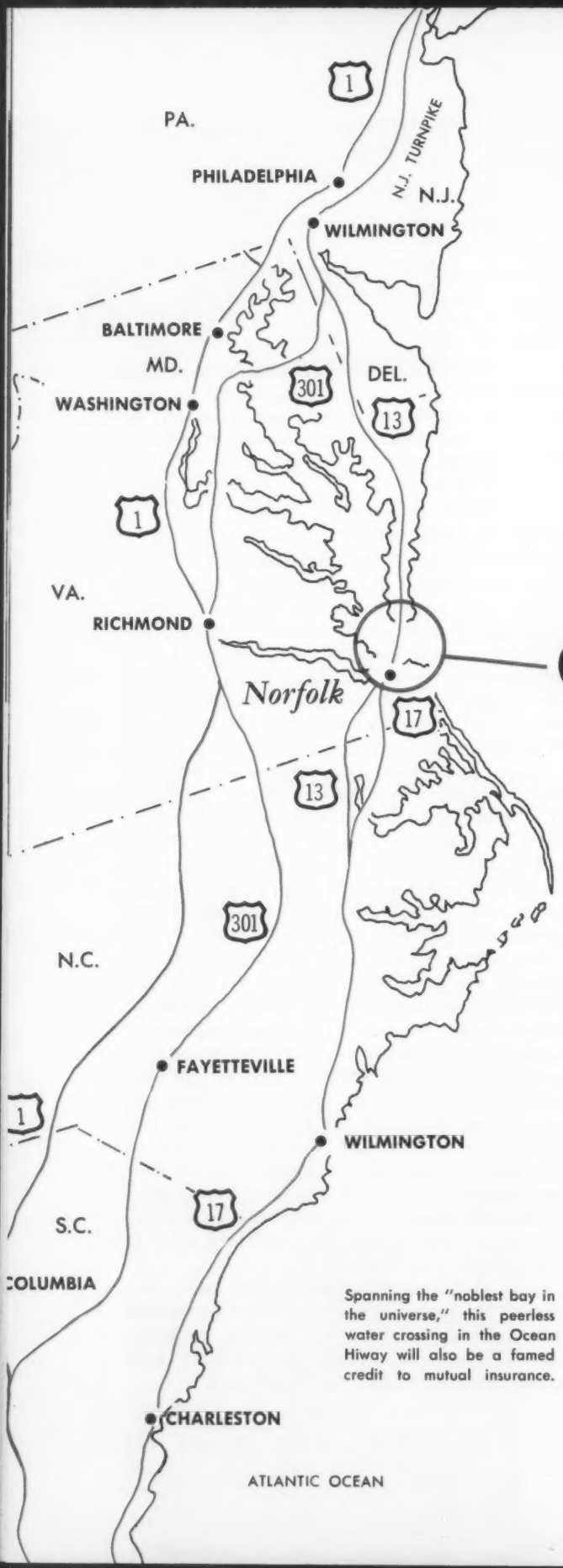
Even a local man made Mary's schoolhouse famous with the poem. He was John Roulstone, a divinity student boarding in Mary's home town of Sterling, Massachusetts. Having heard the story of the lamb, he wrote three verses and next day left them with the teacher, Rebecca Kimball. Later Sarah Josepha Hale, in not too distant Newport, New Hampshire, added three verses to complete the poem in the form that it passed into American folklore through McGuffey's *Readers*. Mary later taught school in Sterling, and it is said that her portrait still hangs in the old Sawyer home. The old school, sought by Henry Ford's scouts for the Wayside Inn site, was found in use as a shed in Sterling.

As depicted on the JOURNAL front cover, it stands restored today, plaque-marked, as a monument to the community-engendered sentiment and support for our schools. One cash-on-the-line measure of this support is that voter approval of school bonds for elementary and secondary schools last year reached a historic high of more than $1.7 billion in 1,189 new issues. School expenditures have shot upward 571 per cent during the past 30 years while enrollment has climbed only 42 per cent.

Enrollment resumes this September with the average annual increase in pupils declining. To accommodate future enrollment, the U. S. Office of Education foresees a need for 610,000 new classrooms through 1968-69. This could be amply met at the average annual rate of classroom construction which has exceeded 67,000 during the past five years.

Responsive to local needs of the public school system, the insurance industry recently has introduced an improved and lower cost type of policy known as the public and institutional property plan. Mutual insurance companies have been especially active in making the plan available to local school districts. One example of a school insured under this plan is the Latonia, Ohio, Orchard Hill High School shown on the JOURNAL back cover. Another is the East Elementary School of Celina, Ohio. The Celina Mutual Insurance Company has insured it under the public and institutional property plan in the amount of $1,207,335.

Local and state expenditures for education, now at $98 per capita in the U. S., are higher than for any other function. Mutual insurance has a long and creditable record of helping local school officials protect that investment. ⊙



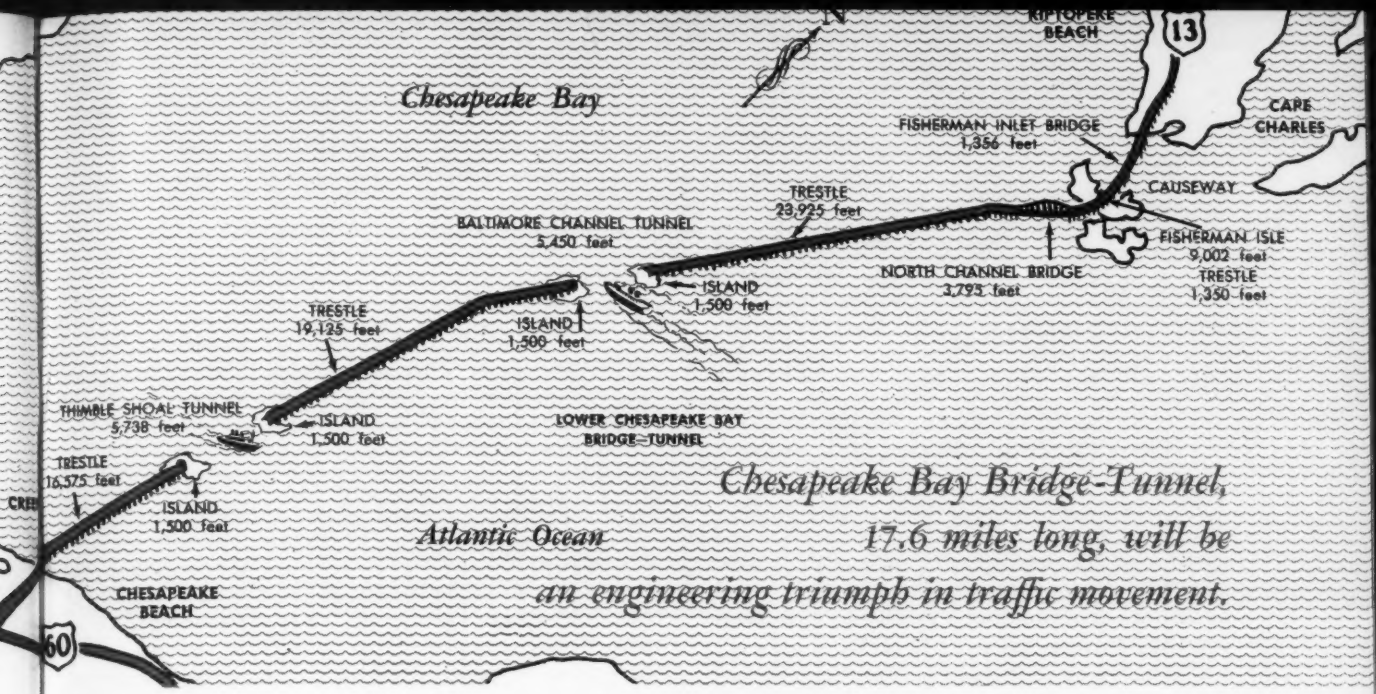
Spanning the "noblest bay in the universe," this peerless water crossing in the Ocean Hiway will also be a famed credit to mutual insurance.

CLIMAX IN

CENTURIES AGO an early settler described Chesapeake Bay as "the noblest bay in the universe." In length, width, tributaries, shoreline area and as a drainage basin, the Bay was endowed by nature as the most impressive body of water in the U. S. It has become an artery of world shipping, America's finest fishing hole and the most fabulous playground of the East Coast.

Now in a crowning touch to its renown it is being spanned at its ocean end by what is destined to be one of man's greatest engineering achievements. That is the Lower Chesapeake Bay Bridge-Tunnel, 17.6 miles long, connecting the lower tip of the Eastern Shore of Virginia with the Hampton Roads-Norfolk area. Designing engineers and consultants are Sverdrup and Parcel, St. Louis.

This will be the final link in the popular Ocean Hiway from New England to Florida. It will eliminate the last water barrier on the route and speed Eastern Seaboard travel by a saving of 1½ hours driving time between New York and Jacksonville. Construction began September 7, 1960, and is scheduled to be completed in time for traffic in the fall of 1963. Supplanted by the new bridge-tunnel will be the Little Creek-Kiptopeke ferry fleet of seven vessels,



Chesapeake Bay Bridge-Tunnel, 17.6 miles long, will be an engineering triumph in traffic movement.

CROSSINGS

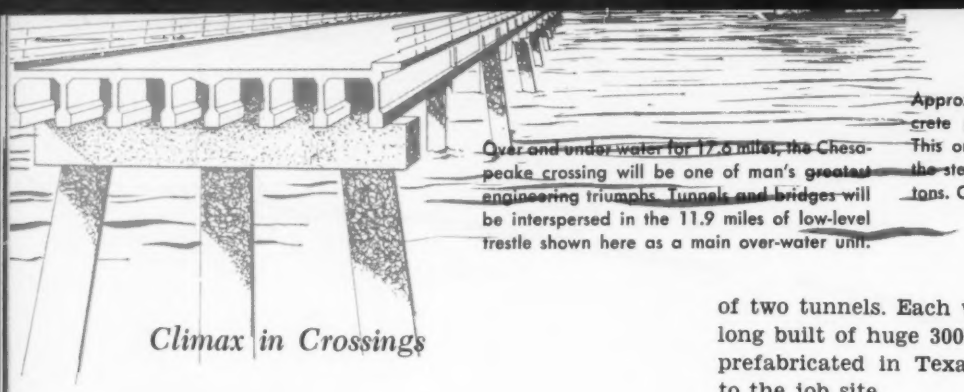
now the world's largest, but no longer adequate for the rising tide of traffic.

Mutual insurance has been a partner in the undertaking from the very beginning with Liberty Mutual Insurance Company, Boston, being insurer for Tidewater Construction Corporation, Norfolk, sponsor of the joint venture responsible for construction of the project. Liberty Mutual also insures two of the separate contractors in the joint venture, Raymond International, Inc., New York, and Peter Kiewit Sons' Co., Omaha. The fourth contractor in the joint venture is Merritt-Chapman & Scott Corporation, New York. American Bridge Division, U. S. Steel Corporation, Pittsburgh, is the contractor for the North Channel and Fisherman Inlet Bridges steel superstructures. Governing body of the project is the Chesapeake Bay Bridge and Tunnel Commission.

Safety and workmen's compensation coverage for the 1,500 to 2,000 men on the project are only part of the mutual insurance teamwork in this spectacular undertaking. In the path of the bridge-tunnel are some of the Bay's oyster beds, annually yielding multimillions in the most valuable of all the Bay's sea-food products. Strict state laws safeguard these oyster beds. Due consideration therefore had to be given them when Liberty Mutual officials, bridge-tunnel representatives and the contractors mapped out the loss prevention program and insurance details pertaining to the pile driving, island construction, bridge piers and other facets of one of the major engineering feats of the century.

Scope of the insurance role in protecting the value of life and property in the project is reflected in an allotment of $3,120,000 for administration, legal, insurance, right of way and miscellaneous. Construction costs alone are estimated at $122,333,800, with an additional $7,625,000 for engineering and $6,121,200 reserve for contingencies, bringing the total estimated cost to $139,200,000.

Financing of the project was done by a $200 million tax-exempt bond issue, due July 1, 2000, and payable solely from tolls and other revenues. Here again insurance took a leading role, with life insurance policyholders' funds providing the capital for about half the bond issue. Traffic-engineer studies made by Wilbur Smith and Associates, New Haven, Connecticut, indicate that during the first 36 years the proposed facility will produce an average annual gross revenue of $20,049,000 from a traffic flow that will number 5,000 vehicles per day upon open-



Over and under water for 17.6 miles, the Chesapeake crossing will be one of man's greatest engineering triumphs. Tunnels and bridges will be interspersed in the 11.9 miles of low-level trestle shown here as a main over-water unit.

→ Approximately 3,000 of these prestressed concrete piles will be required in the project. This one, just starting down under impact of the steam hammer, is 80 feet long, weighs 33 tons. Construction began this way a year ago.

Climax in Crossings

ing and gradually increase to 8,500. Proposed toll for a passenger car and driver is $4.

Vast economic developments in the wake of the bridge-tunnel completion will open new needs and markets for all lines of insurance. The southern part of the Delmarva Peninsula, heretofore dependent on a restricted farm economy, will have a future as a vacation area and a center for small industry. The Tideland section of Virginia, one of the fastest growing areas in the U. S. but heretofore limited as an economic island, will have its cities "on the main line" within overnight distance from New York by truck.

This will be the longest bridge-tunnel in the world, with some points out of sight of land and various sections over or under 35 to 50 feet of the turbulent water where the Bay and the Atlantic Ocean merge. The oldest bridge in the world, built more than 2,810 years ago in Izmir, Turkey, is nothing more than a 40-foot stone slab. But the new Chesapeake span will require approximately 3,000 prestressed concrete cylinder piles, 55,000 tons of steel and 550,000 cubic yards of concrete. London Bridge, famous for "falling down" in the old singing game, took 33 years to build, while the famous crossing for the Chesapeake will be completed in three years with the help of a fleet of 40 to 50 floating derricks, barges, tugboats and other aids, some of which such as the "walking pile driver" were specially built for the job. Reminiscent of the shops on the marble Rialto bridge spanning the Grand Canal in Venice, the Chesapeake span will have a restaurant and fishing facilities on one or more of the islands.

One of the first and more difficult tasks involved is the building of the four artificial islands. Made of sand dredged up from the bay, each island will be more than a quarter-mile long and 230 feet wide, rimmed with quarry-run stone protected by derrick-sized stone.

Resting on these islands will be the four ends of two tunnels. Each will be more than a mile long built of huge 300-foot watertight sections, prefabricated in Texas and towed 1,700 miles to the job site.

Over each tunnel will be a channel at least 50 feet deep affording passage to the largest Navy and commercial ships bound for or from Hampton Roads, Baltimore, Annapolis or Washington.

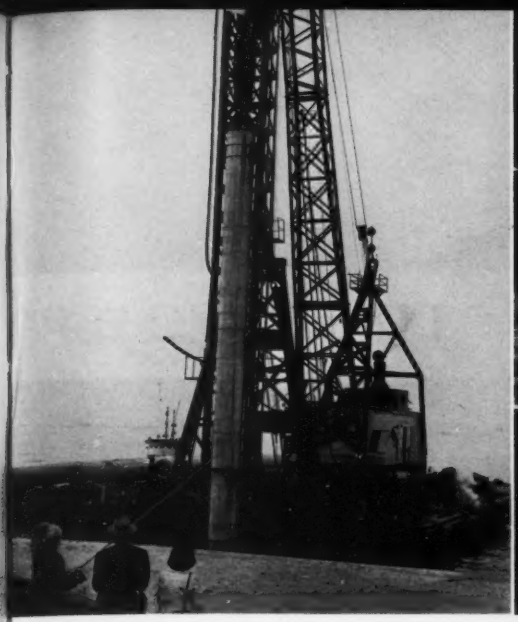
The two high-level bridges over navigational channels at the northern end of the crossing will be nearly three-fourths of a mile and more than one-fourth of a mile long, respectively, with clearances more than ample for vessels using these minor channels. Connecting the two bridges will be a 1⅔-mile causeway across Fisherman Island, a Navy installation. New approach highways to the crossing will cover approximately five miles.

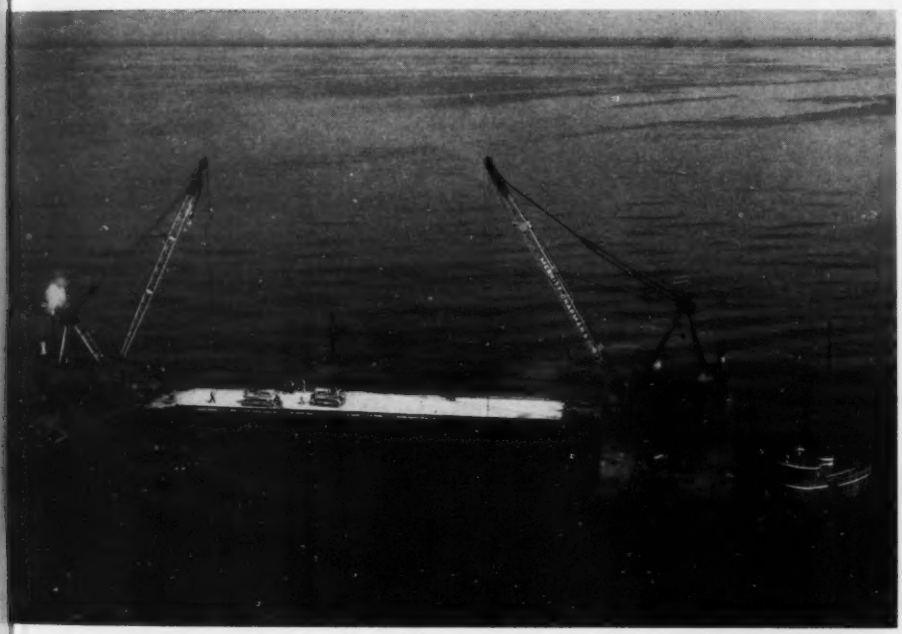
Exclusive of these special structures, most of the crossing will consist of low-level trestle. The roadway over trestles and bridges will be 28 feet, curb to curb, permitting two-lane traffic around a stalled vehicle. There will be 18-inch safety walks on each side. The tunnels will have a roadway 24 feet wide with a service sidewalk.

Completion of the crossing will take Norfolk completely out of the ferry boat era. The 1952 completion of the Elizabeth River Bridge-Tunnel and the 1957 opening of the Hampton Roads Bridge-Tunnel eliminated two ferry services before the Chesapeake Bay Bridge-Tunnel was launched to replace the one remaining line. As one unit of this triparted system, a second Elizabeth River Tunnel is a Liberty Mutual insured project of Diamond Construction Company.

Two years hence, when the Chesapeake Bay Bridge-Tunnel is opened, vacationists, travelers and commercial traffic will be able to save more than 70 miles and the equivalent in time between Norfolk and New York City with the bonus of a thrilling ride over the mouth of "the noblest bay in the universe." ⊙

→ Tunnel sections under construction at Orange, Texas, plant, with dwarfed workman circled on scaffolding. For tug transport, the tubes were sealed with steel bulkheads, ballasted between core walls with concrete, launched like ships.

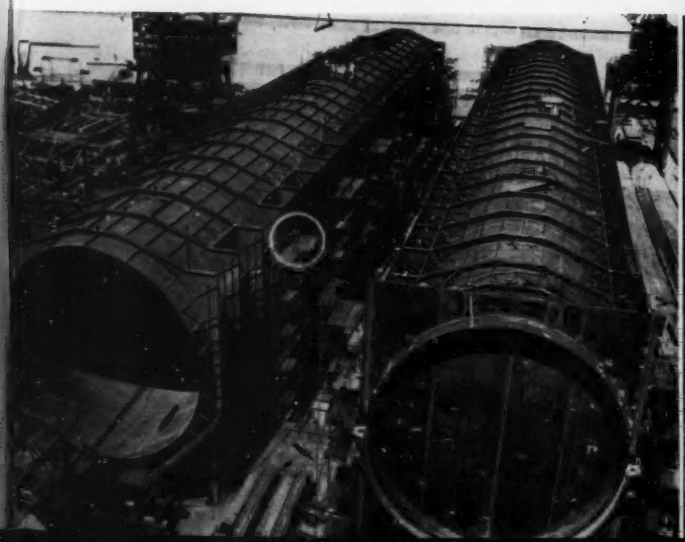


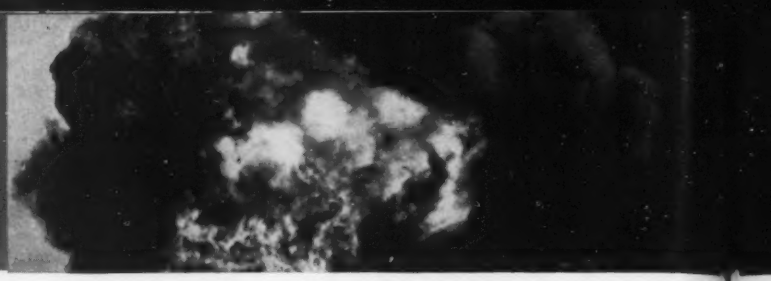


This $3 million precasting plant was built by Bayshore Concrete Products, Inc., at Cape Charles, Virginia, to manufacture piles, girders and slabs for the Chesapeake span. Long piles are produced in sections by spinning.

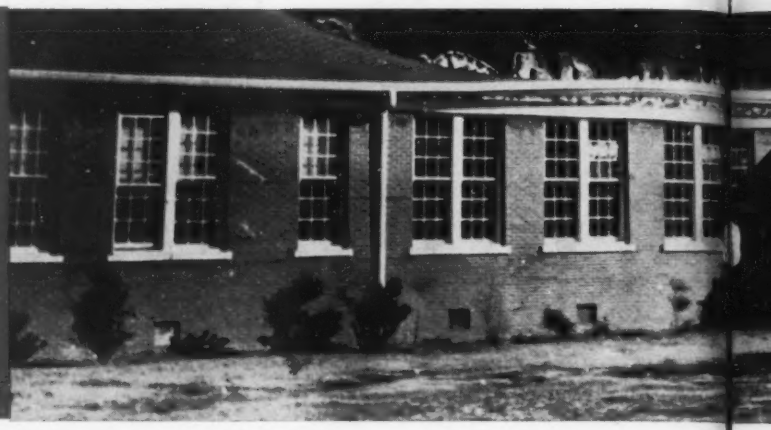
←
An island for one end of a tunnel is in the making under water as bull-dozers unload protective stone from the barge. Floating cranes position the barge for accuracy in placing stone on the rim of site for island.

One of the 37 huge steel tunnel sections, fabricated by American Bridge Division, U. S. Steel, on the 1,700-mile tow trip from the Orange, Texas, plant to the Chesapeake site. Each of two tunnels will be full mile long.





WORST IN BIG FIRES: OUR



One of 14 large loss school fires of 1960, this blaze destroyed a suburban school near Memphis, Tennessee. Taxpayers, religious bodies lost $5.2 million in last year's large loss school fires.

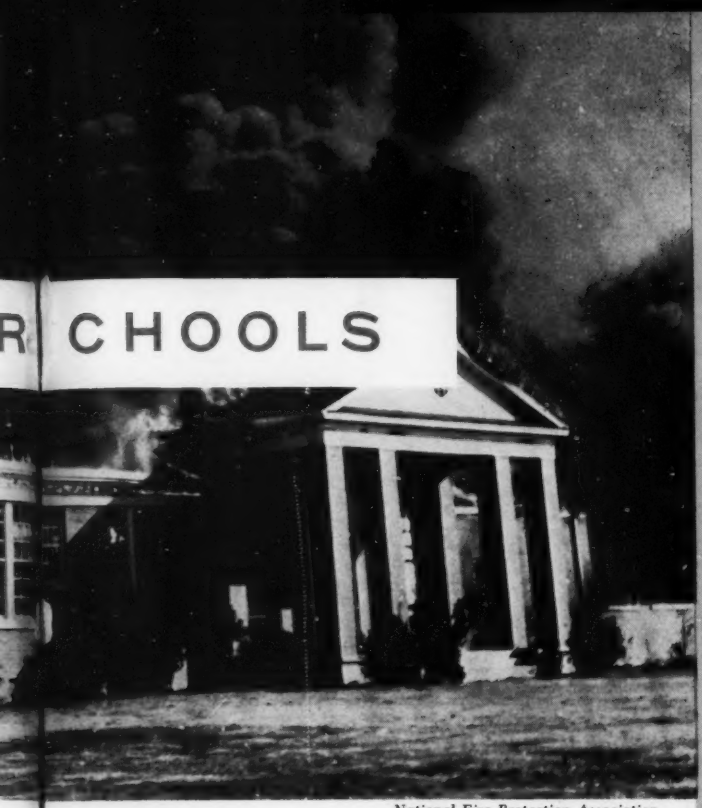
More large loss fires occurred in school buildings in 1960 than in any occupancy category.

FIREMEN NEAR MEMPHIS, Tennessee, faced a raging school fire last November 18 without water to fight it. While a 1,000-gallon water truck shuttled between a Memphis hydrant and Ford Road Elementary School, the fire spread and destroyed $250,000 worth of buildings and contents. Ironically, a county water main in front of the school had not been tapped for hydrants.

This Tennessee fire, apparently set by malicious pupils, became one of 14 U. S. school fires of 1960 listed as large losses by the National Fire Protection Association. In aggregate, they caused damage of more than $5.2 million and amounted to fully 5 per cent of the costliest structural fires in the nation. Schools thus top the list of occupancies most often hit by large loss fires, those that cause $250,000 or more in property damage. Following schools in 1960 were steel fabricating plants, 12 large loss fires; hotels and supermarkets, 11 each; churches and sawmills, with 9 costly fires each.

As shown on these pages, expensive school fires struck extensively from North Carolina to Oregon. Causes ranged from defective heating or wiring systems through carelessness with a blowtorch to juveniles' nervousness with forbidden cigarettes. Outbreaks occurred about evenly divided between school and nonschool hours.

Common to all the fires, however, were reasons for fire spread that might have been anticipated and eliminated by foresighted school administrators or board members. In at least nine cases automatic fire alarms would have speeded detection and reduced losses. Lack of automatic sprinklers in several burned schools permitted limited fires to grow to large loss proportions. In other fires, inadequate fire departments or insufficient water supplies permitted flames to spread in outlying suburban schools. In Salt Lake City school officials mis-



National Fire Protection Association

takenly built a high wire fence with only one gate, a barrier to fire fighters.

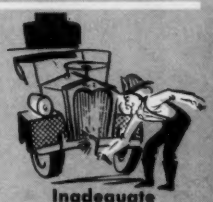
Officials of thousands of public and parochial schools can help stanch this fire record as they review fire prevention measures and fire protection facilities for the 1961-62 school year. Many will have the experienced counsel of mutual insurance loss prevention engineers who know what conditions foster large loss fires. One mutual engineer recently said, "School authorities have not yet learned that installed fire protection is as important to schools as desks, books and toilet facilities." Adequate insurance protection, including advice on how to eliminate hazards, is incumbent upon school boards morally responsible for returning children safely after each school day and protecting our tremendous national investment in education.

In seeking to protect life and property through planning, school board members might look to the example set for them by administrators and faculty members. Not one student was killed in all 14 large loss school fires of 1960. Evacuation procedures learned in fire drills enabled students to live while their schools were destroyed. ⊙

Five Fiends in Large Loss Fires

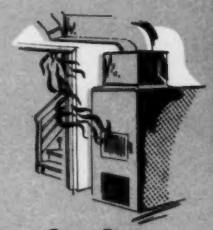
Delayed Detection

Insufficient Water



Inadequate Private Protection

Delayed Answer of Alarm



Open Ducts

14 Schools in '60 Toll

PENNSYLVANIA
Eddystone, Dec. 12, $650,000 loss.
Pittston, Feb. 19, $393,500 loss.
Philadelphia, March 10, $400,000 loss.

NEW JERSEY
Gloucester City, March 10, $303,000 loss.
Camden, April 17, $400,000 loss.

TENNESSEE
Shelby County, March 21, $260,500 loss.
Near Memphis, Nov. 18, $250,000 loss.

OREGON
Empire, Feb. 17, $341,000 loss.

OHIO
Wauseon, March 19, $700,000 loss.

IOWA
Lewis, May 8, $330,000 loss.

INDIANA
Mitchell, May 29, $260,000 loss.

ARIZONA
Winslow, Aug. 28, $305,500 loss.

UTAH
Salt Lake City, Oct. 29, $250,000 loss.

NORTH CAROLINA
Winston-Salem, Dec. 1, $400,000 loss.

Dick Kent

REBIRTH OF THE TRADING POST

Shopping centers, insurance financed and protected, provide one-stop buying for millions.

IN FRONTIER AMERICA, a trip to the trading post was a social event of major importance. There a man stored up enough conversation to chew on for the next few months while his wife and wide-eyed youngsters savored the profusion of goods piled, stacked and hung on pegs to delight the eye and stir the imagination: bright bolts of calico, polished leather saddles, barrels of sugar and salt, pewter pitchers, vials of medicine for the "fevers," sides of meat and handsome new rifles.

Today this magnetic appeal has been recaptured by an institution that is rapidly forging a new frontier in U. S. retailing: the modern shopping center. These giant trading posts have transmuted the huckster's hoarse cry into an

←
Albuquerque's Winrock Center, opened last March, has enclosed mall which protects shoppers from weather, gives them a place to rest and talk in old trading post tradition. Because such malls could spread fire and hamper fire fighting, center is fully sprinklered.

irresistible siren song for millions of American shoppers, luring them in by the carloads with free parking, a dazzling display of abundance and a steady fanfare of circuses, summer theater, art shows, golfing exhibitions, turkey shoots and holiday pageants.

More than 1,000 new centers will be built this year alone, accounting for nearly two-thirds of the year's total retail store construction. The International Council of Shopping Centers estimates that 5,500 centers will be in operation by January; 10,000 by 1965.

Regarded as a fad and a whimsy only 15 years ago, shopping centers are now taking in an estimated $55 billion a year—about one of every four dollars spent in retail trade. By 1970, merchandisers say, their cut of the retail pie may increase to 60 per cent. Investment in shopping center construction is now running at a rate just under $1 billion a year, with about half of the money being supplied by insurance funds. Total investment to date is about $4.5 billion, $2.2 billion in mortgages held by insurers.

Economist Homer Hoyt notes the most startling indicator of shopping center growth in an analysis for the Urban Land Institute: As of last fall, the area occupied by shopping centers was 46,000 acres—the equivalent of all the central business districts of every city in the United States.

Beginnings of this retailing phenomenon go back 40 years to J. C. Nichols' Country Club Plaza in Kansas City, which now has 150 stores with 1 million square feet of shopping and room for 4,500 automobiles. Other centers appeared prior to World War II in Philadelphia, Dallas,

Sculptor: Marshall Fredericks

"Boy and Bear" is one of 13 whimsical sculptures at Detroit's giant Northland Center, whose 110 stores gross more than $100 million a year. Center has 85 acres of parking, a truck tunnel for deliveries and a theater (silver dome, lower left) seating 1,100. Meeting rooms are used by hundreds of civic groups.

Houston and St. Louis, but they were regarded with strong skepticism by most merchants until about 10 years ago. Notable recent centers include Portland, Oregon's $50 million Lloyd Center, Albuquerque's Winrock Center, Detroit's Northland and Minneapolis' totally-enclosed, weather-controlled Apache Plaza.

Developers and merchants agree that the remarkable growth of shopping centers is based on the nation's massive population shift to the suburbs and America's growing use of the auto. As downtown areas aged and grew less convenient to reach because of traffic congestion, shopping centers sprang up in farmers' cow pastures adjacent to the proliferating acres of split-levels and three-bedroom ranches.

Instead of aiming solely at the nearby shopper, however, center developers pioneered what one of them calls "a massive reorganization of the urban community." Abandoning the pattern of the shop-lined urban street and the earlier village common, architects such as Victor Gruen and John Graham created a new "market town" cluster of store buildings interspersed with graceful malls where shoppers can stroll, rest their feet and talk. Key tenants in the carefully-concocted "mix" of merchants are the big department stores, supermarkets, shoe salons and drug and department stores, which draw the big crowds and help drum up business for the smaller shops and services.

Now the trend is toward grouping competing stores together to increase the competition and make things more convenient for the shopper who likes to compare prices before buying. One prime example: After years of fierce rivalry side by side in downtown Manhattan, Macy's and Gimbels decided to continue their profitable battle in Roosevelt Field and Garden State Plaza.

Other prominent trends include enclosed malls for better weather protection and the growth of all kinds of cultural and commercial enterprises near the retail shopping facilities that a center provides.

James B. Douglas, president of the giant Northgate Center in Seattle, told a group of builders several months ago that both present and future centers had better begin expanding into ventures completely divorced from shopping.

"I have in mind such things as medical buildings, amusements, office buildings and various other features that give you the completeness of the city you are building—because you *are* building cities," he declared. He added that if center managements fail to provide these facilities, "they will come around anyway [and] surround your center in such a way as to choke it."

Insurance coverages for a shopping center, with or without industrial and residential adjuncts, are handled partly by the center's management and partly by each individual merchant who leases space for his store. The most common arrangement is for the developer to insure all buildings against fire, lightning, windstorm, vandalism, malicious mischief and other physical perils, while the tenant covers only his stock and fixtures.

Distinctive atmosphere of Hawaii is apparent in Ala Moana Center, Honolulu, located between the congested downtown business district and fast-growing Waikiki. This 50-acre regional center includes the 25-story office building nearing completion at left, designed with a revolving restaurant on top. Balloon parade at right drew 50,000 spectators on a Saturday morning as the kickoff feature of an Easter promotion. Fashion shows also draw good crowds.

Edens Plaza

Like many large downtown department stores, Chicago's Carson Pirie Scott & Co., has invested heavily in shopping centers both as a developer and tenant. Two mutual insurance companies carry most of the firm's property and casualty coverages in both of its roles.

Liability coverages are usually handled the same way—the landlord covers mishaps on the malls and parking lots, the store owner insures against accidents on his premises.

In order to minimize conflicts growing out of an inevitable overlapping of responsibilities, some shopping centers provide in their leases and insurance policies that firms in the compound may not sue each other or the landlord for fires that start in one store and spread to another or for damage caused by one or the other's negligence. In such cases, the injured party would look to his own insurance company for recovery.

Robert Bermant, whose New York management firm specializes in shopping centers, told his associates in the International Council of Shopping Centers that organizations such as merchants associations also should be included as an additional insured under a center's liability coverages.

"One of our merchants associations was sued when a reindeer bit a child on the arm during a Christmas promotion, and our insurance company assumed the liability," he said. Bermant warned that liability claims are increasing, and said his firm has raised liability coverages on all its centers from $100,000 per person to $1 million because of soaring jury awards in personal injury cases.

"It's getting so we can tell how much business any of our centers is doing by the number of claims we receive each week," he commented wryly.

A third coverage important to both the developer and his tenant goes under the general title of "time element" coverages, also known as business interruption, profits, or rents insurance. The basic idea is to provide protection against the loss of business or the extra cost of doing business that nearly always results from a fire or other catastrophe. Developers insure against the rents they would lose. Retail stores use this coverage to protect their profits in the event they were burned out and it took them several months to reopen. Service shops such as laundries and professional people such as doctors, lawyers and dentists need a policy tailored to reimburse them for the extra costs of doing business from temporary premises as the result of physical damage to their regular stores or offices.

Mutual fire and casualty insurers carry coverages of all types on both shopping center managements and on stores that lease space in centers, including such well-known firms as National Tea, Allied Stores, the Kroger Company, Walgreen's, J. C. Penney, Gimbels, Sears and Carson Pirie Scott & Co.

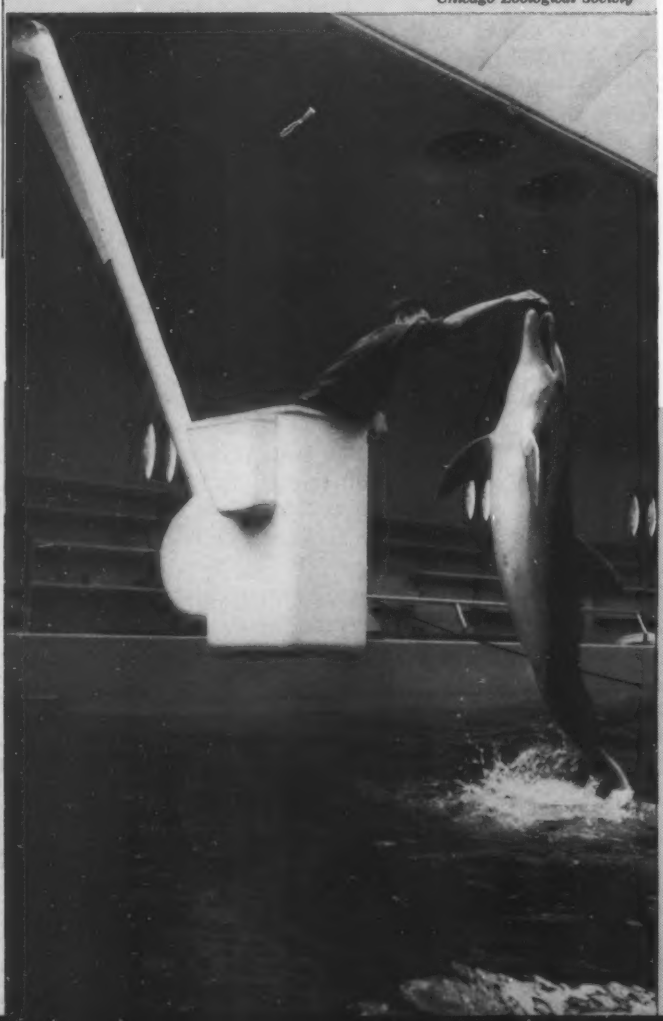
Robert Bermant pinpointed the reason when he revealed to his fellow managers that his centers were receiving a 40 per cent dividend on their fire insurance policies, written with a mutual insurance company. As he put it, insuring with a dividend-paying company is "the simplest method I've found to save on premiums." ⊙

Camera Hawaii

"SEPTEMBER MORN," DOLPHIN STYLE

These unabashed aquatic beauties have trained professionally to thrill their viewers.

Chicago Zoological Society



FOUR POMPOUS PERFORMERS, with none of the inhibitions of artist Paul Chabas' sunrise bather, are nonchalantly cavorting through their première performances in their new $900,000 aquarium west of Chicago.

Like all actors, these four delight in performing before large audiences and being rewarded with rousing applause. But unlike their human counterparts, they're happiest when someone throws them a fish. This is excusable, for these entertainers are bottle-nosed dolphins that were recently removed from their Atlantic Ocean home to star in the "Seven Seas Panorama" at Chicago's Brookfield Zoo.

About a year ago six of these fish-eating mammals were captured by nets off the Florida coast and taken to the Miami Seaquarium. Here they were purchased for $1,000 each by the Chicago Zoological Society. Then problems started.

Tractable though they are, the dolphins were neither inclined nor adapted to swim up the Mississippi River as an accommodation to their new owners. Instead they were whisked up by air, with a mutual insurance policyholder, Delta Air Lines, providing innovations in travel service.

Since dolphins are aquatic mammals, they cannot remain out of water for any extended period. Hence, arrangements had to be made for a fast, hopefully uncomplicated flight

High-leaping dolphin is a picture of grace as it responds to an offer of fish. Trained aquatic mammals performed in a public debut last month in Brookfield Zoo's new aquarium.

Delta Air Lines

aboard a Delta cargo freighter. Foam rubber mattresses were spread over the plane's floor, a barrel of salt water was placed on board for periodic spongings of the dolphins to prevent their skins from drying, and three attendants were on hand to answer the mammals' every squeak.

Before the flight left Miami, Captain William Gray, director of collections and exhibits at the Miami Seaquarium and one of the trip's coordinators, remarked that they would be "extremely lucky" to deliver all six of the dolphins alive. Despite all measures taken to make the mammals as comfortable as possible, Captain Gray's prediction was correct. One dolphin died en route to Chicago and another died after arriving at the zoo.

But the remaining foursome, after recovering from some minor illnesses during the first days at the new quarters, are now well settled and seemingly oblivious of the Atlantic Ocean. And why not? The huge panorama building would delight the most doleful of dolphins.

Constructed by the Campbell-Lowrie-Lautermilch Corporation, which carried its general liability and workmen's compensation coverages with a mutual insurance company, the modernistic structure surpasses the Atlantic Ocean as a dolphin show place. For spectators there are seats for nearly a thousand around the 100-by-25-foot pool. Below the water level in the pool wall there are large rectangular portholes for viewing the antics of the dolphins. Special artificial lighting has been installed for photographing the animals under water. A sound system enables viewers to hear sounds made by the dolphins by means of their lungs and "blowholes." An attendant at Brookfield Zoo said one of the dolphins blurts out the best "Bronx cheer" he's ever heard.

The pool contains 185,000 gallons of heated salt water which is constantly agitated. Water salinity is maintained at between two and two and a half per cent, and complete filtration of the pool takes place every 90 minutes. According to Robert Bean, director of the zoo at Brookfield, salt water is used to provide the dolphins with a natural ocean buoyancy. Because they must breathe air and therefore surface every two or three minutes, the buoyant salt water makes this task much easier.

Although the ever-smiling mammals are new to the Midwest, they have been entertaining sailors the world over for many years. Seamen still consider it good luck if their ship is being followed by a school of leaping, playful dolphins.

The dolphins' ability to swim faster than a destroyer has prompted Navy scientists to study their "secret" of speed. A naval research review stated that if present theories are correct, future submarines and torpedoes may have heated coverings that can ripple in the water, patterned closely after the skins of porpoises and dolphins.

But Maggie, Vicky, Tommy and Power can't be bothered with such technical problems right now. These intelligent creatures are too busy perfecting their act of jumping rope, ringing a bell and displaying their many other talents.

Visitors to Brookfield's landlocked dolphin playground will probably be as intrigued as one zoo official who avowed: "I've quit trying to determine whether they're dolphins or porpoises. I'm wondering now if they might be people." ⊙

Dramatic new $900,000 "Seven Seas Panorama," built by a mutual-insured contractor, gives the talented dolphins all of the comforts of their ocean birthplace, plus more.

Flight from Miami to Chicago required special care for the dolphins. Strapped to foam rubber mattresses, mammals were sponged with salt water to prevent skin from drying.

Greer instructor John Dixon demonstrates with a sandbox model how to give a scraper a friendly shove with a bulldozer. Scraper needs the extra power during loading. Classwork of this kind informs students what to expect from the equipment before they are allowed to use it.

After sandbox demonstrations, students practice the same techniques on Greer's half-million-dollar fleet of earthmoving equipment, most of it loaned by the manufacturers. Greer insures them and the school against potential mishaps.

A student from New Jersey learns how to handle a dragline in Greer's special course for crane operators. He also will be taught operation and preventive maintenance of the back hoe, shovel and clam, all of them crane-operated devices for moving soil, rock, mud and stumps.

John Lardi guides an African student through a step-by-step explanation of how to use the Drott Skid-Shovel. Greer has trained some 300 foreign students since 1958, most from countries deeply involved in the cold war.

Students from all over the world master the big machines at Greer Earthmoving School.

MEN TO MOVE MOUNTAINS

ELEVEN ARAB construction workers will embark for their native Yemen this month as part of a U. S.-sponsored "Peace Corps" in reverse.

For the past 12 weeks, they have been learning to move mountains at one of the world's most unusual teaching institutions — Greer Earthmoving School near Braidwood, Illinois. They were sent there by the Yemen government to master the giant machines that bite, scrape and dig to rearrange the earth's crust for man's convenience: bulldozers, self-propelled loaders, shovels, graders and dump trucks. Now they are returning home to use their newly-acquired skills in building a highway linking Yemen's capitol, Sanaa, with the Red Sea ports of Hodeida and Mocha.

Yemen's decision to train its own workers in the U. S. has peculiar significance for the U. S. Department of Commerce and the International Cooperation Administration, which made arrangements for the trip and provided interpreters. Russian construction crews are building one end of the highway, the U. S.-trained workers the other—a situation that inevitably invites comparison.

Participation in international affairs is becoming a habit at Greer. In the past four years, the school has trained more than 3,200 heavy equipment operators and mechanics, about 300 of them from Formosa, Thailand, Korea, Indonesia, the Philippines, Ceylon, India, Ecuador, Chile, Sudan and other African, Asian and Latin American countries. The ICA awarded Greer a citation this summer for "significant contributions" to the organization's technical assistance to underdeveloped countries.

A more visually appropriate setting for a cold war battleground could hardly be found. The school is located on a desolate 1,700-acre tract of worked-over strip mines about 60 miles southeast of Chicago. Extraction of coal has left the landscape gouged and chopped into a maze of hills and valleys, sharp cliffs and raw earth that gives the impression of a field where opposing armies have clashed and departed. Now the torn terrain is gradually being rehabilitated with the addition of roads, a dam, an airstrip and other improvements made by students as they learn to cope with all kinds of construction problems.

"We chose this site because it has just about everything an operator is likely to run into on the job—rough terrain, trees, mud, rock, lakes and a wide range of soil types," says Keith M. Hutchison, vice president and educational director of Greer Technical Institute, the earthmoving school's parent institution. Greer also has a construction equipment mechanics school at nearby Wilmington, Illinois, in addition to its main campus in Chicago.

Earthmoving students can enroll for courses ranging from 5 to 32 weeks at a cost of $425 to $2,200. In the basic five-week course for construction equipment operators, students learn how to start, operate and maintain dump trucks, bulldozers, front-end loaders and self-propelled scrapers. Crane and grader operators take separate five-week courses, and the mechanics course runs 13½ weeks.

"We don't expect our students to go out of here as experts," says Field Supervisor John Rolando, one of 14 instructors at Braidwood. "It takes years of practice to become a really good operator or mechanic. But we have found that a man who has some natural co-ordination and who pays attention can learn the funda-

mental skills here. He can then get and hold a job that will give him the experience he needs."

Safety is an important part of these "fundamental skills." It is, in fact, the subject of the first lesson and is implicit in all of Greer's training. Before a student is allowed to take over the controls of any machine, he first goes through a "dry run" in a classroom sandbox, using scale models of the equipment. He then moves out into the field for a repeat performance, with the instructor riding beside him until he becomes familiar with the controls.

Most students find the self-propelled scraper the most difficult machine to master because there are so many things to do at once—shift gears, steer, operate the clutch and accelerator, and control the bite of the blade.

"One troublesome problem is adjusting to the hand clutch found on most big machines, especially for people who have never driven an auto with a standard gearshift," says John Rolando. In addition, bulldozers and other crawler-type machines are guided solely by the brakes—which tends to be confusing to a driver accustomed to a steering wheel.

Despite these hazards, the school has never had a student seriously injured. There have been several close calls, however. A few weeks ago a student lost control of a 14-ton motor grader on a bumpy road and bounced to a stop halfway over the edge of a 50-foot cliff, with another 50 feet of water below. Another near miss occurred during the winter of 1960 when an old roadbed crumbled under the weight of a 24-ton earth mover and sent the machine sliding into a mine pit filled with 30 feet of mud and water. The student operator leaped to safety just in time, but it took instructors and students seven days and nights to free the machine.

Al Barra, supervisor of the construction equipment mechanics division, tells students how to avoid injury while removing track springs, which are under 13,000 pounds of pressure.

Greer's instructors emphasize the finality of many heavy equipment mishaps by telling their students grim little stories of how accidents have occurred, coupled with specific instructions and repeated demonstrations of ways to prevent them. They hammer away at safety rules until the students know them as well as the instructors: "When you get off a machine, always let the blade down, put the transmission in neutral and disengage the engine clutch." And again: "Never work on a machine with the blade up and the engine running—and by all means block all moving parts with a piece of timber so they can't fall down on you."

This emphasis on safe operation and good maintenance has made the school popular with construction contractors and their insurers, since both the direct and indirect costs of an accident can be enormous. As Rolando put it, "A contractor can easily lose $1,500 an hour while a single piece of heavy equipment is out of commission because of breakdowns or mishaps, without even counting the cost of injuries and damage."

Greer itself has an inventory of more than half a million dollars worth of equipment, most of it provided on educational loans by manufacturers such as International Harvester, Harnischfeger, Hough and Galion. The school accepts full responsibility for this equipment and insures it against loss or damage under a policy known as a construction equipment floater. This provides broad protection both for the school and for the lending company.

Greer also insures all of its operations against liability for mishaps involving students and the public. The school's extensive shops and administrative buildings in Chicago are covered by a mutual fire insurance company whose engineers provide frequent and rigorous inspection services.

This month, as the first of America's volunteer Peace Corpsmen begin training in Puerto Rico, their counterparts from Yemen and other far-flung parts of the globe are quietly using their Greer training to move mountains on hundreds of cold war fronts. ⊙

Zaharis
Here, in the Wayside Inn's central section, started about 1686, visitors may still recapture the spirit of Longfellow's *Tales.*

LONGFELLOW'S INN REVISITED

Alexander Monroe

The Red Horse name and sign, "half effaced by wind and rain," are credited to Ezekiel Howe, 1746, but his father, David, preceded him as innkeeper, having acquired the property from his own sire, Samuel, first of the Howe proprietors.

Wayside Inn, 275 years old, is an insured treasure house of American history and hospitality.

JUST AS WAS PROPHESIED 100 years ago by the poet Henry Wadsworth Longfellow:

> *"Perchance the living still may look*
> *Into the pages of this book,*
> *And see the days of long ago*
> *Floating and fleeting to and fro."*

What made those words doubly prophetic is that the old inn where Longfellow wrote the book, *Tales of a Wayside Inn,* has survived along with his stories to become one of America's guarded heritages.

Today Longfellow's Wayside Inn, extant despite hurricanes, fire and the wear of time, thrives at South Sudbury, Massachusetts, 18 miles west of Boston, in the finest traditions of New England hospitality and as a shrine that does honor to the poet's America of long ago.

It is linked in history with the battlefields

Longfellow bedroom, circa 1714, and one of the four oldest rooms in the Inn, is furnished with rare 18th-century pieces and contemporary hangings. Both the Inn and contents are insurance protected; strict fire prevention is practiced.

Longfellow's Inn Revisited

of Lexington and Concord, only 10 miles away. It had a role in the growth of the Colonies to vigor and wealth. It sheltered General Lafayette in 1824 during his tour of the new independent republic he had succored. Henry Ford once owned it; later it was operated by the National Trust for Historic Preservation. Today it is administered by the Wayside Inn Trustees, a group of Bostonians concerned with historic preservation of which Frederick J. Bradlee is president and William B. Osgood treasurer.

Most of the valuables memorialized in *Tales of a Wayside Inn* are there, together with rare 18th-century furnishings and pieces contemporary with the Inn when Longfellow knew it.

Restoration and preservation of the Inn itself are so faithfully performed that many visitors, remembering the deletory 1955 fire, ask Innkeeper Francis J. Koppeis or some of his staff, "How much of the Inn was damaged?"

Loss prevention safeguards, paramount throughout the more than 200-year history of mutual fire insurance, are in effect at the Inn to prevent a recurrence of the 1955 damage. The best of fire detection systems has been hooked up by direct line with the Sudbury Town Fire Department. Sudbury had help from fire companies of neighboring towns in the 1955 fire, but lack of water when the fire-truck tanks ran dry allowed the fire to gain while firemen were chopping through 18 inches of ice on a nearby pond.

Water for fire fighting still comes from wells only, precluding the use of an automatic sprinkler system. But 34 fire extinguishers of three different types are positioned throughout the Inn property. These are checked semiannually by a local firm. In addition the Inn staff checks the extinguishers regularly and frequently, maintenance men making a monthly check and night watchmen a weekly check.

Constant vigilance, espoused by Benjamin Franklin in his founding of mutual fire insurance, is relied upon by the Inn as the principal protective measure. After closing at night a check is made for any signs of trouble in rest rooms, meeting rooms, kitchens, trash cans and elsewhere. Three more checks are made on the night man's tour. Smoking is restricted to the dining rooms, taprooms and bedrooms. Further, the Sudbury fire chief makes a semiannual check of the building and a bimonthly check of the alarm system.

Insurance, most of which is in fire coverage, is carried on the Inn and its contents in the amount of $200,000.

Longfellow himself ensured the history of the Inn for posterity when he wrote to a correspondent in England shortly after publication of *Tales of a Wayside Inn* in 1863:

"The Wayside Inn has more foundation in

Around the parlor fireside, setting for the *Tales*, may still be seen many of the storied items — the "sombre clock," fair Princess Mary's face, the sword of the landlord's grandsire and the Howe coat of arms. Parlor is one of the oldest rooms.

Here at the door of the old kitchen, now restored, the 1955 fire was stopped, but the charred ceiling and walls still give off the telltale scent. Fortunately, 80 per cent of the Inn's original furnishings were saved, some being fire-marked.

fact than you may suppose. The town of Sudbury is about twenty miles from Cambridge. Some two hundred years ago, an English family by the name of Howe built there a country house, which has remained in the family down to the present time, the last of the race dying but two years ago. Losing their fortune, they became inn-keepers; and for a century the Red Horse Inn flourished, going down from father to son. The place is just as I have described it. . . . All the characters are real. . . ."

Research indicates a probable building date of the Inn's first two rooms as somewhere between 1686 and 1700. Then through the years it was expanded and improved. Ezekiel Howe, grandson of the original Samuel Howe and therefore third in the line of succession, was the most successful of the landlords, having named the Inn the Red Horse Tavern. As a colonel of two companies of Sudbury militia, he led those volunteers to Concord on April 19, 1775; his wife and family fed Revolutionary troops at the Inn. In turn Ezekiel's grandson, Lyman, became the last of the Howe landlords, and it is he along with the professors, students and other guests who spent their summers there who is described in Longfellow's *Tales*.

Thereafter Howe heirs and one other owner had possession for a time, after which an association of colonial-spirited Bostonians including Henry Cabot Lodge was formed to preserve the property. Among those enlisted, Henry Ford became so interested that he purchased the Inn's estate and about 5,000 adjoining acres. In time many of the old Howe furnishings and belongings were sought out and returned. To the community Ford also moved the schoolhouse attended by Mary Sawyer and her lamb as told in *Mary's Lamb*. The building was located in Sterling, Massachusetts, being used as a shed. Among other buildings restored or built by Ford on the Inn property was the Mary-Martha Chapel, in honor of his and Mrs. Ford's mothers and today one of the favorite photographic subjects in New England.

In 1944 Ford and his wife, Clara, deeded the entire Wayside Inn estate to the Wayside Corporation. Concern for its future spread worldwide following the fire of 1955. The General Court of Massachusetts passed a resolution calling for restoration, school children from Hawaii and Chile even sent donations, and the Ford Foundation made a grant of $500,000.

Experts in the restoration of early New England buildings supervised the rebuilding of the Inn into a combination museum and modern hotel permeated with the welcome, hospitality and restful comfort that were hallmarks in 1862. Longfellow departed the stage forever almost 80 years ago, but the scene lives on today:

"The windows of the wayside inn
Gleamed red with fire-light through the leaves." ⊙

Vast U. S. ports get strict management in loss prevention to protect personnel and commerce.

ACRES OF HOUSEKEEPING

IT WON'T TAKE another maritime strike, with the dire effects of a long tie-up, to prove that the United States is still a maritime nation.

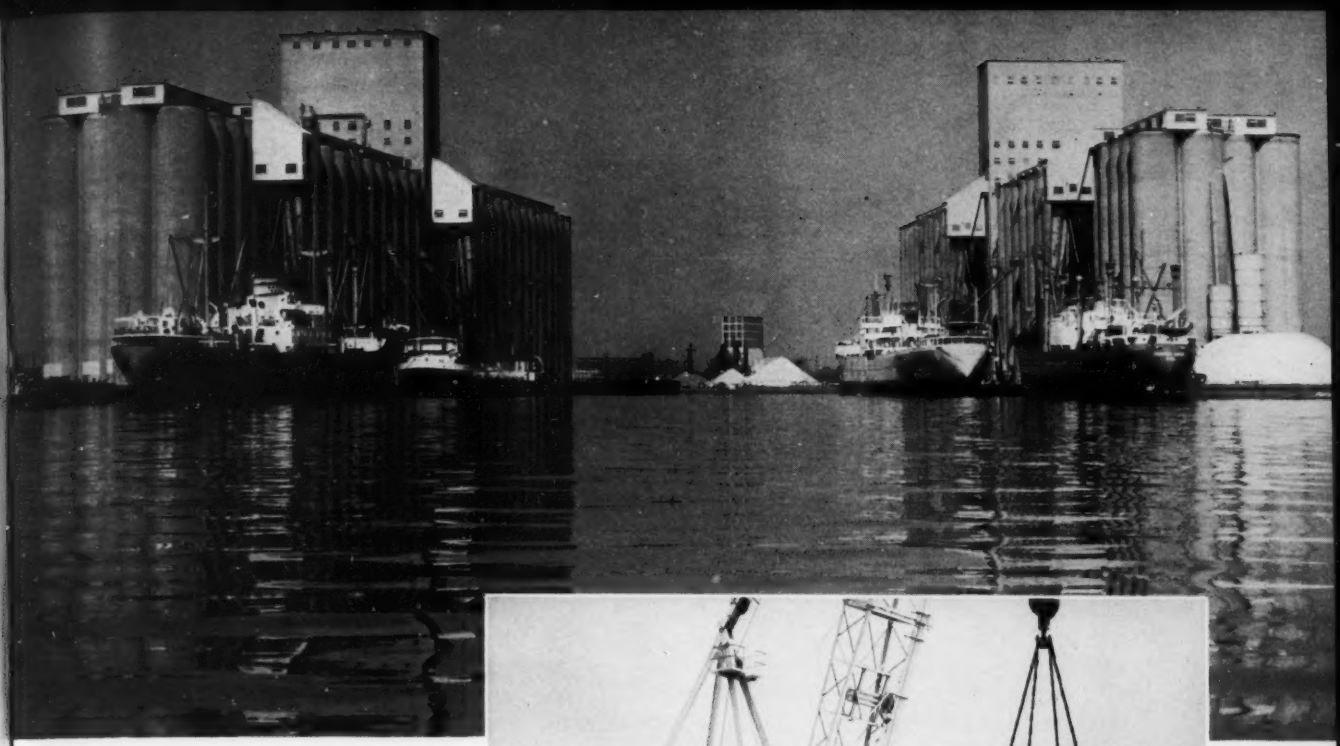
But if there are those who are still unconvinced, they have only to take a new look at U. S. ports, now among the world's most dynamic transportation centers. On three coasts and at fledgling Great Lakes ports, shippers' needs are being met by massive expansion and renovation of pier and warehouse facilities. U. S. ports are getting ready to handle increasing amounts of marine shipping already past a 1 billion ton annual volume.

New Orleans, which has spent $55 million on port facilities since World War II, plans to expend $130 million more by 1970. Its Gulf Coast rival, Houston, is in the midst of a $52 million port improvement project. On the Pacific Coast, Seattle's $25 million waterfront improvement program is typical. Chicago, Detroit and Duluth are expending substantial sums to accommodate the growing volume and variety of commodities passing through the St. Lawrence Seaway.

From the time dock facilities are planned, insurance becomes an important partner of the maritime industry and puts its protective services to work to make shipment by water safe and economical. Marine contractors operating complicated equipment at dockside require coverages for liability, workmen's compensation, truck fleets, extra expense and physical damage, among others. Once facilities are completed, underwriters of fire and allied lines provide insurance and loss prevention services for operators of vast piers, terminals and warehouses. And when ships come in, ocean marine underwriters, the "grandfathers of the insurance business," protect the value of commodities and shepherd them to consignees.

Nowhere is the loss prevention partnership between the insurance and maritime industries of more avail than at dockside. Consider the Port of New York, the world's greatest sea terminal, where 30,000 men each year handle 150 million tons worth $9 billion. In a year one of five longshoremen working cargo aboard ship

Port of Cleveland



Grain elevators at Chicago's Lake Calumet harbor are typical of growing port facilities on three coasts, Great Lakes. U.S. ports handle 1 billion tons yearly.

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French truck weighing 100 tons unloaded by folding crane and brawn of longshoremen. Dock workers are injured 10 times more often than those in manufacturing.

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General view of Port of Cleveland shows extent of housekeeping problems at U.S. ports. Fire and theft prevention demand unending vigilance of port authorities.

Two photos Chicago Regional Port Authority

suffers a disabling injury. Waterfront employers pay an estimated $20 for workmen's compensation for every $100 of payroll expense, a total of $25 million annually. Nationally, the injury rate among longshoremen is 10 times higher than in manufacturing, according to the Bureau of Labor Standards, U. S. Department of Labor.

The Bureau formulates regulations for cargo-handling equipment on merchant vessels and enforces them through annual inspection and certification. Every four years Bureau inspectors conduct full tests of winches, booms and masts, cables, hooks and blocks on foreign-flag ships. Similar inspections of American-flag ships are conducted by the U. S. Coast Guard. Such inspections, coupled with improvement of cargo-handling equipment and the loss prevention services of workmen's compensation insurers, have reduced accident frequency on the New York waterfront during the past five years. In 1960 the rate was 70.3 accidents per million man-hours of work.

However, as one shipping authority notes, "Only 2 or 3 per cent of accidents are caused by faulty gear. The rest is man fault." And, an insurer observes, the problem of reducing human failure on dockside is vastly complicated by continuing labor-management strife at many ports and by general lack of co-operation between waterfront employers' groups and the International Longshoremen's Association.

Ports throughout the country have recognized the hazards of longshoring by arranging for standby ambulance and medical services.

Port of Houston

Fireboat Capt. Crotty demonstrates its prowess in turning basin of Port of Houston. Local governments provide police, fire, ambulance protection at most of the nation's harbors.

Acres of Housekeeping

But rapid growth of some ports has posed special problems. Consider the case of Chicago's Lake Calumet Harbor where a longshoreman fell into a ship's hold and was seriously injured. An ambulance spent 15 minutes locating the right ship. Port officials prevented similar confusion by dividing the 3.2 square mile port area into zones. Personnel now identify the zone of emergency and stand by to direct firemen, policemen or ambulance drivers to the point of need.

Once unloaded or while waiting to be put on board, cargo is stored in warehouses, in-transit sheds or, in the case of weather-resistant commodities, in open storage areas. Here hazards of fire, theft and natural disaster must be met with loss prevention measures on a grand scale. Special protective measures have been formulated at all ports for handling hazardous cargoes, such as explosives.

Fire resistive construction materials—usually steel, concrete and asbestos—are being used in most new port warehouses, all well-spaced to prevent fire spread. Storage structures are protected by complete standpipe or sprinkler systems, usually of the dry type to prevent freezing in pipes. Chemical extinguishers supplement the sprinklers, and automatic fire alarm systems add protection in most terminal buildings. Mutual fire insurance companies, which underwrite a substantial share of fire coverages at major ports, offer premium reductions to operators of buildings fully protected by sprinklers and automatic alarms. Mutual insurance loss prevention engineers conduct regular tests of protective systems.

Underwater fire fighting accomplished by Los Angeles firemen in frogman outfits is newest development in dockside fire protection. Strap on substructure absorbs recoil of loaded hose.

Los Angeles Fire Department Photo by Manwarren

In Houston, 33 companies located on the 20-mile Port of Houston channel have formed the Channel Industries Mutual Aid Organization to meet each other's fire disasters. CIMAO pools 700 fire fighters; 14 fire trucks; 52,000 feet of hose; 24 portable pumps; more than 100,000 pounds of powdered foam; liquid foam, and other fire-fighting equipment. Most ports have the added protection of radio-dispatched fireboats, and some are now planning to buy versatile jet fireboats that avert the problem of flotsam and stay close to shipboard or dock fires. Public grain elevators, in use at most major ports, are protected with heat-detection systems, standpipes, and fire extinguishers of various types.

Pilferage and theft, major waterfront problems throughout maritime history, have been given increasing attention by port managers. New port buildings have few hiding places and maintenance crews are diligent in housekeeping chores.

At Lake Calumet harbor in Chicago, all tenants have automatic burglary alarm systems in terminal buildings and warehouses, a practice common to most ports. The Port of Houston, which handles in excess of $1 billion in cargo each year, has a uniformed plant protection force of 34 men. Port areas are generally well-lighted, surrounded by sturdy fences and subject to 24-hour watch service by private agencies and local police.

Milwaukee's maritime labor employers have a unique arrangement with the International Longshoremen's Association providing that an act of pilferage shall not only be cause for immediate discharge by the employer, but shall also be a cause for expulsion from the longshoremen's union.

While insurers, employers, unions and public agencies co-operate to reduce preventable losses at U. S. ports, technology is creating new problems for the ancient maritime industry. Nuclear-powered merchant ships will soon call at our ports, bringing with them the hazards of radio-activity and more housekeeping headaches. ⊙

Buckingham

Commissioner Sears administers a department with seven major subdivisions and a staff of 48.

SEARS OF MARYLAND

CAPTAIN JOHN SMITH stamped Maryland territory as superior insurable property more than 350 years ago when his 1608 explorations convinced him, "Heaven and earth seemed never to have agreed better to frame a place for man's commodious and delightful habitation."

Insurance is fulfilling a historic role in keeping the state that way. Seven of the 23 mutual property and casualty insurance companies of the state are more than 100 years old, with a total exceeding 900 years of protective service. State revenue in excess of $9 million is now being realized from insurance taxes and fees collected by Commissioner F. Douglass Sears' department from the 722 companies licensed in the state and from agents and brokers.

Those 722 companies, in the most recent fiscal year of record, had assets of more than $133 billion and paid losses exceeding $218 million. Maryland's own 23 mutual property and casualty insurance companies had assets of $33 million and paid direct losses of almost $2 million. There were 105 other mutual property and casualty companies licensed to do business in the state with assets of $4.5 billion and direct losses paid in Maryland of $25 million.

For property to be prized and protected, Maryland is matchless although the state is 42d in size among the 49 others. Annapolis alone has proportionately more colonial houses in daily use than any other town in America. The State House, Annapolis, a Registered National Historic Landmark, was the Capitol of the U. S. in 1783-84 and is now the oldest State Capitol still used for its original purpose. Maryland's Eastern Shore is famed throughout the country for its colonial manor houses, while the hub of the prosperous Delmarva Peninsula is at Salisbury, Maryland. Fort McHenry is well preserved as the 1814 backdrop for the waving flag that inspired Francis Scott Key to write the National Anthem. Our national capital is on land donated by Maryland.

Maryland's leading industrial products are transportation equipment, chemicals, apparel and fabricated metals. Dairying is the largest agricultural revenue producer, but the state also cans about one-third of the nation's tomato crop. There is a world market for southern Maryland tobacco, while the Preakness and other equestrian enterprises have made the state one of the nation's great horse racing centers. Chesapeake Bay, with 300 kinds of fish and shellfish, is the center of a fishing industry.

Commissioner Sears, a son of the Eastern Shore, was appointed May 4, 1959, and has been in the insurance field throughout his business career. After training in business administration, he started in the fire insurance field in Crisfield, branched into a substantial casualty business and expanded into life insurance. He then opened and was manager of the Great American Insurance Company's branch office for Maryland and the District of Columbia until his retirement on March 31, 1958. Azaleas, the distinctive flowering shrub of the Maryland region, are his hobby.

In the National Association of Insurance Commissioners, Commissioner Sears has served on a number of committees and subcommittees and is now a member of the newly elected committee for Zone 2. ⊙

Maryland's Insurance Department occupies the eighth floor of this new State Office Building opened two years ago, Baltimore.

M. E. Warren